

## WE CLAIM

1. An image sensing and printing device which comprises
  - a housing;
  - an area image sensor positioned on the housing for sensing a viewed image to be printed on media and for generating pixel data representing the viewed image;
  - a printing mechanism that is arranged on the housing, the printing mechanism defining a media feed path and comprising
    - a printhead assembly that includes a pagewidth printhead having at least one printhead chip that spans the media feed path; and
    - a feed mechanism for feeding media along the media feed path so that the printhead can carry out a printing operation on the media; and
  - a processor that is positioned in the housing, the processor comprising
    - processing circuitry;
    - an image sensor interface connected to the processing circuitry for receiving pixel data from the image sensor, converting the pixel data into an internal format and writing the converted pixel data to the processing circuitry, the processing circuitry being configured to convert the pixel data to print image data; and
    - a printhead interface connected to the processing circuitry for receiving the print image data from the processing circuitry and for providing signals representing the print image data to the printhead so that the printhead can carry out said printing operation to generate a printed representation of said viewed image.
  
2. A device as claimed in claim 1, in which the area image sensor is one of a charge coupled device and an active pixel sensor.
  
3. A device as claimed in claim 1, in which the printing mechanism includes an ink distribution assembly that is mounted on the printhead assembly to distribute ink to the printhead chips.
  
4. A device as claimed in claim 1, in which the processing circuitry defines a VLIW processor that is configured to perform image processing operations on the pixel data.
  
5. A device as claimed in claim 1, in which the processor is configured to be programmable with any of a number of image processing programs so that the processor can carry out image processing operations on the pixel data in accordance with a selected program loaded on the processor.
  
6. A device as claimed in claim 5, which includes a reader for reading said any of a number of image processing programs stored on a data storage device and a reader interface for writing the program to the processor.
  
7. A device as claimed in claim 6, in which the reader is an optical reader for reading a two-dimensional pattern

printed on a planar element, the two-dimensional pattern representing a program in an image processing language, the optical reader being configured to generate program data and the reader interface being configured to receive the program data and to write the program data, in an internal format, to the processor.

8. A device as claimed in claim 7, in which the processor includes a memory device, the processing circuitry being configured to write the program data in the internal format to the memory device, the processor further including a central processing unit which runs the program from the memory device to define a software algorithm in terms of which the central processing unit addresses registers in the printhead interface to apply a desired effect to the print image data..